

(No Model.)

2 Sheets—Sheet 1.

D. S. McELROY.
RAILWAY TRAIN SIGNAL.

No. 438,084.

Patented Oct. 7, 1890.

Fig. 2.

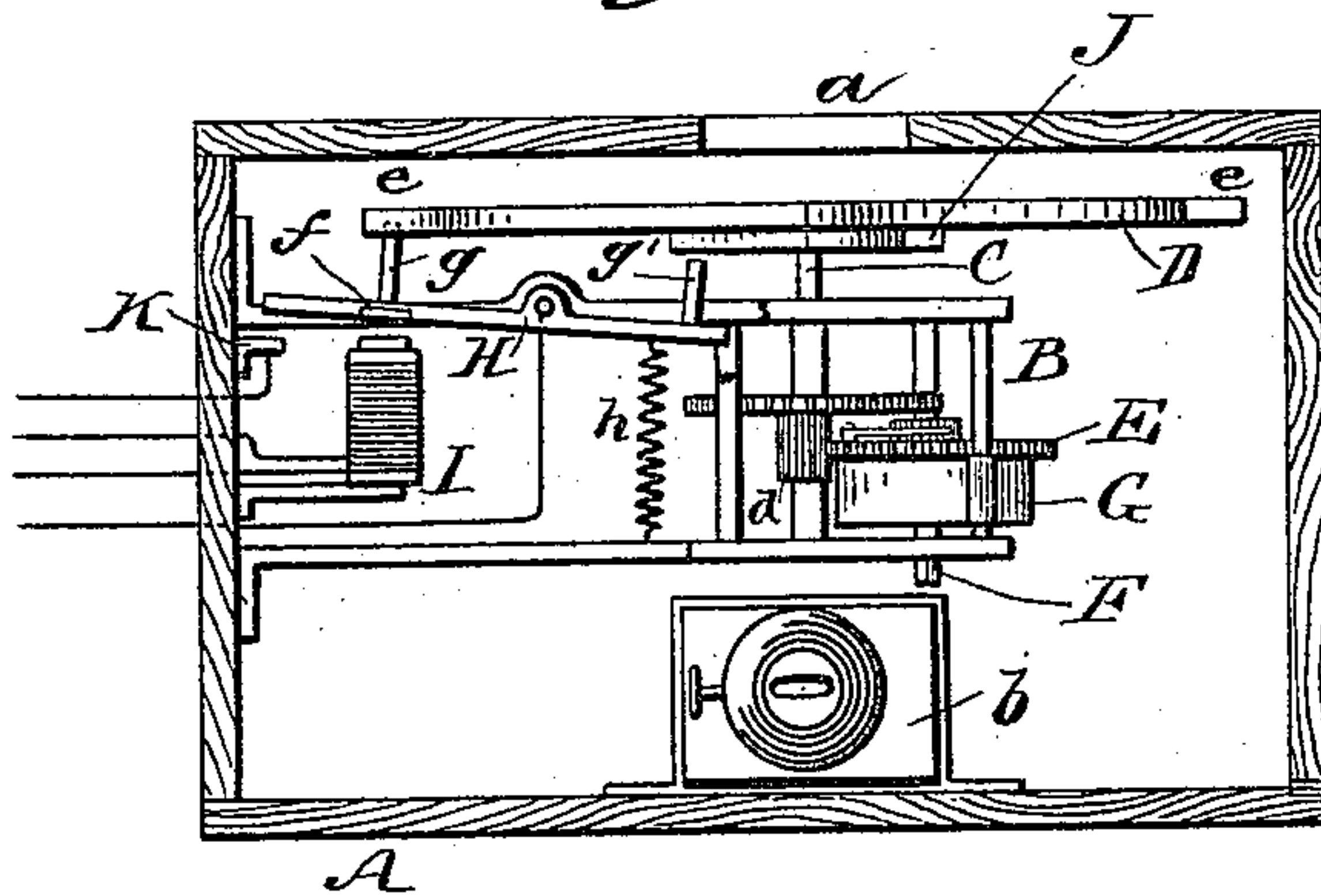
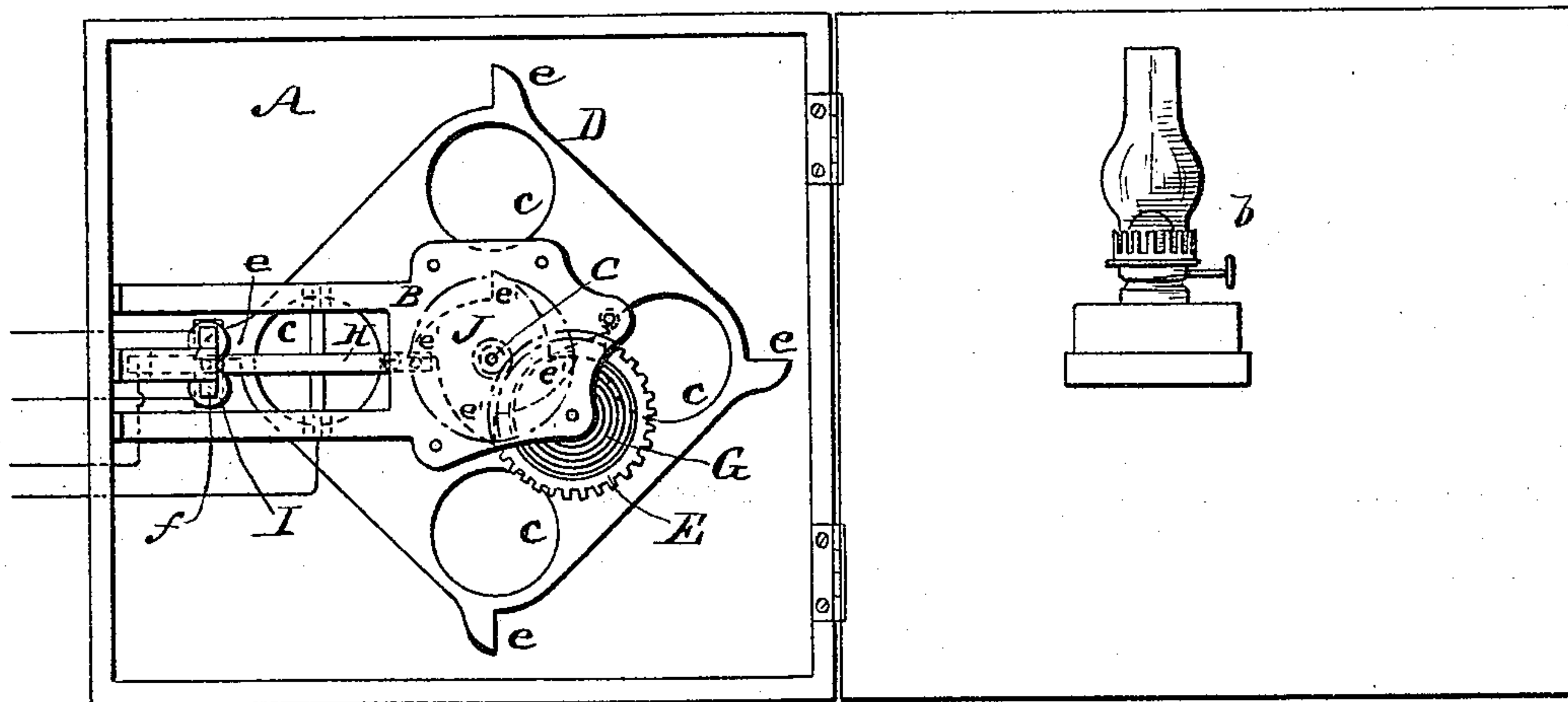


Fig. 1.



WITNESSES:

John H. Deemer
C. Sedgwick

INVENTOR:

D. S. McElroy
BY *Munn & Co.*
ATTORNEYS

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Fig. 3.

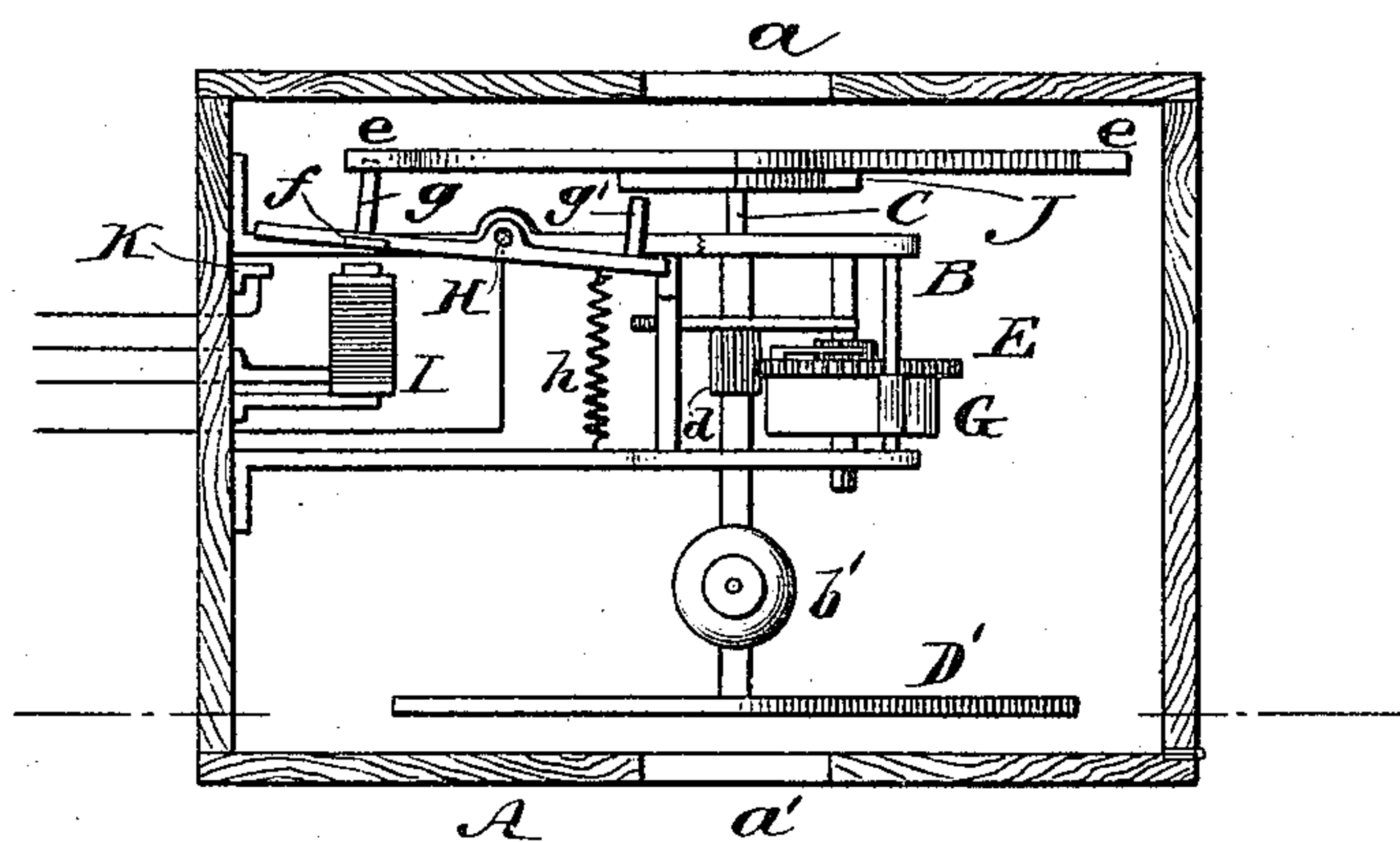
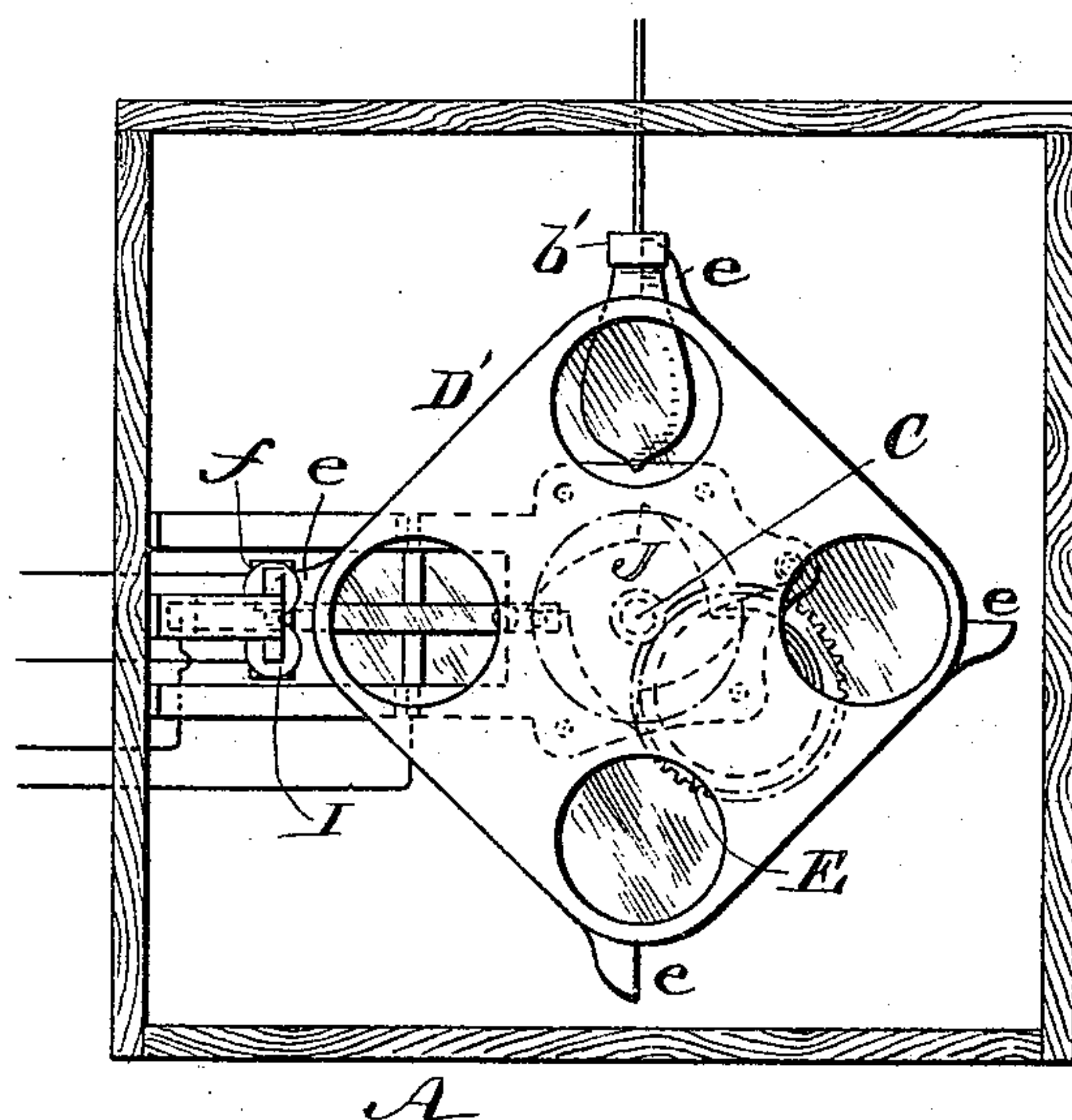


Fig. 4.



WITNESSES:
John H. Deemer
C. Sedgwick

INVENTOR:
D. S. McElroy
BY *Munn & Co*
ATTORNEYS

UNITED STATES PATENT OFFICE.

DANIEL S. MCELROY, OF NEW YORK, N. Y.

RAILWAY TRAIN-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 438,084, dated October 7, 1890.

Application filed December 7, 1889. Serial No. 332,946. (No model.)

To all whom it may concern:

Be it known that I, DANIEL S. MCELROY, of New York city, in the county and State of New York, have invented certain new and
5 useful Improvements in Railway Train-Signals, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a side elevation of my improved
10 signal-box, showing the same in an open position. Fig. 2 is a plan view with the top of the box removed. Fig. 3 is a plan view of a box provided with two signaling-plates, and Fig. 4 is a rear elevation of the same with the
15 side of the box removed.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a signal-box for railway train-signaling, which
20 will be positive in its action, and which will send a return-signal for each operation.

My invention consists in the combination, with a suitable lantern, of a revoluble plate, an electrically-operated escapement for al-
25 lowing the plate to move through a given portion of a revolution, and a signaling device connected with the escapement of the plate for sending a return-signal.

It also consists in the combination, with the
30 signaling-plate and plate-operating mechanism, of an auxiliary plate arranged in the back of the box, and a light supported between the plates.

My present invention is an improvement
35 upon a railway train-signal for which Letters Patent of the United States, No. 413,409, were granted to me on October 22, 1889.

The signal-box A is provided with an opening *a* in one side thereof, and is furnished at
40 the opposite side with a lamp *b*, which is located directly opposite the said opening *a*.

Between the lamp *b* and the front of the box containing the opening *a* is arranged a frame B, in which is journaled an arbor C, the
45 end of which projects through the said frame toward the front of the box A, and carries a plate D, provided with apertures *c*, in which are inserted windows of different colors.

On the arbor C is mounted a pinion *d*, which
50 is engaged by a spur-wheel E on the shaft F,

the said shaft being provided with a propelling-spring G, which causes the wheel E to turn the arbor C.

The plate D is provided with four arms *e*, and in the frame B is pivoted an armature-
55 lever H, which carries the armature *f* within the field of an electro-magnet I. The said armature-lever H is provided with the stud *g*, which projects normally into the path of the arms *e*, and forms a detent or stop for the said
60 arms.

Upon the arbor C, adjoining the plate D, is secured a scape-wheel J, having four teeth *e'*, corresponding in position with the arms *e*.

The armature-lever H is prolonged beyond
65 its pivot and provided with a pin *g'*, which is adapted to engage the scape-wheel J whenever the armature *f* is drawn forward toward the magnet I, withdrawing the pin *g* from the path of the arms *e*. The armature-lever H is
70 provided with a retractile spring *h*, which returns it to its normal position after it has been released from the magnet I.

A contact-point K is secured to the box A in the path of the end of the armature-lever
75 H, and the said contact-point and the lever are connected in an electric circuit including an alarm apparatus at the signal-station, so that whenever the circuit of the magnet I is closed to release the plate B and give a signal,
80 the contact of the armature-lever H with the point K sends a return-signal, showing that the apparatus is operative.

In the apparatus shown in Figs. 3 and 4 the arbor C is prolonged rearwardly and carries a plate D, provided with windows, as in
85 the other case. In the present case an incandescent electric lamp *b'* is placed between the two plates so that its light may be seen through the plates simultaneously. Any suitable
90 light may be used in lieu of the electric light.

Having thus described my invention, I claim as new and desire to secure by Letters
95 Patent—

1. In a railway train-signal, the combination, with the plate D, provided with the apertures *c* and arms *e*, of the scape-wheel J, and the armature-lever H, provided with the pins
100 *g g'*, substantially as specified.

2. The combination of the plate D, provided with arms *e*, the scape-wheel J, the armature-lever H, furnished with pins *g g'*, the electro-magnet I, and the circuit including the armature-lever H and contact-point K, substantially as specified.

3. The combination, with two signals having a common shaft, and a clock mechanism for rotating the shaft, of an electro-magnet, and an armature-lever pivoted between its ends adjacent to one of the signals and pro-

vided at its outer end with a pin to engage said signal and prevent rotation of the shaft until the magnet is energized, the opposite or inner end of the said armature-lever serving as a scape-lever to stop the rotation of said signals, and a source of light common to both signals, substantially as set forth.

DANIEL S. McELROY.

Witnesses:

EDGAR TATE,
C. SEDGWICK.